

## TRADITION VERSUS HISTORY IN AMERICAN METEOROLOGY

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The claims of the biographers of Matthew Fontaine Maury that he was the founder of our national weather service have been discounted by Charles F. Brooks (1), but in trying to avoid Scylla, Brooks runs into Charybdis when he says that Cleveland Abbe's forecasting service at Cincinnati grew into the national weather service.<sup>1</sup>

Inasmuch as the interest in the history of science and in the lives of scientists is now increasing, it may be of interest to writers of textbooks and of encyclopedias, to learn of other claims that have no more basis than those just mentioned. The following have been extracted from sources that would naturally be regarded as of the highest authority:

*James Pollard Espy* "organized a service of daily synchronous observations which became subsequently the meteorological bureau of the Signal Service" (2).

"\* \* \* the electric telegraph \* \* \* was first employed in the United States at the suggestion of Henry, Secretary of the Smithsonian Institution, in 1849, to transmit to the Signal Service an indication of the weather at each telegraph office at the opening of business for the day" (3).

*Joseph Henry* "was the \* \* \* organizer of the Weather Bureau" (4).

*Joseph Henry* "was the organizer of the Climatological Service, a branch of the Weather Bureau, which collects the weather observations of nearly 5,000 cooperative observers located in all sections of the United States" (5).

"He [Joseph Henry] personally organized the great system of meteorological observers with its army of voluntary observers and its daily telegraphic reports, which formed the beginnings of the present United States Weather Bureau" (6).

*Cleveland Abbe*. "It fell to the lot of this modest man to initiate the national systems of weather forecasting which are to-day maintained by nearly every civilized nation of importance" (7).

"To be known, for a quarter of a century, as the dean of American meteorologists; to be recognized as the chief factor in bringing about the inauguration of our national system; \* \* \* these are no slight distinctions" (8).

The Marcellus Hartley memorial medal "awarded to Cleveland Abbe for distinguished public service in establishing and organizing the weather service of the United States" (9).

"The Smithsonian Institution \* \* \* began a series of meteorological observations at the end of 1847."

"The \* \* \* next event \* \* \* was the organization of the Signal Service \* \* \* in February, 1870." "The Signal Service began to function<sup>2</sup> on February 9, 1870, and continued until June 30, 1891."

"\* \* \* the United States Weather Bureau, at first called the United States Signal Service, had its inception in this State [Ohio]." "In 1868, Mr. Frank A. Armstrong, local manager of the Western Union Telegraph Co., at Cincinnati \* \* \* began the daily collecting and publishing of weather reports. This soon attracted the attention of Prof. Cleveland Abbe."

"Professor Abbe and Mr. Armstrong \* \* \* on February 2, 1869 issued the first current weather map ever published in this country" (10).

The incident referred to in the foregoing quotations, the initiation of meteorological telegrams for the benefit of commerce and navigation as a function of the Signal Service of the Army, is easily accessible in the official records.

A memorial written by Increase A. Lapham, of Milwaukee, Wis., on December 8, 1869, and addressed to Gen. Halbert E. Paine, Member of Congress from the congressional district in which Milwaukee is located, induced Paine to prepare a bill (H. R. 602) which he introduced on December 16, 1869. Paine obtained letters in support of his bill from the following persons:

J. K. Barnes, Surgeon General, United States Army.  
Joseph Henry, Secretary of the Smithsonian Institution.  
Elias Loomis, professor in Yale University.  
Albert J. Myer, Chief Signal Officer of the Army.

The memorial and accompanying list of marine disasters from Lapham and the letters from these gentlemen were printed as Executive Document No. 10, parts 1 and 2, Forty-first Congress, second session. In binding they became separated, the first appears in the volume bearing serial No. 1431, the second in serial No. 1416. House bill 602 becoming pigeonholed in committee, General Paine originated a joint resolution (H. J. Res. 143), which was introduced by him in the House and by Senator Wilson, of Massachusetts, in the Senate, on February 2, 1870, passed and received the signature of the President on February 9, 1870.

The execution of this act, which appropriated \$25,000, was assigned by the Secretary of War to Gen. Albert J. Myer, Chief Signal Officer of the Army. The Signal Service had been organized June 27, 1860, was renamed Signal Corps on February 24, 1880, lost the civil meteorological work by transfer to the newly constituted Weather Bureau on June 30, 1891, and continues in existence to-day. Myer engaged and trained the necessary personnel, purchased instruments, arranged telegraph circuits, and started the meteorological service on November 8, 1870, when he hired Lapham as the first meteorologist of his service.

According to the usual custom in naming legislation—e. g., "Volstead Act," McKinley bill," etc.—credit for establishing the national weather service belongs to Halbert E. Paine. The initial stimulus was supplied by Increase A. Lapham, whose list of disasters on the Great Lakes furnished the "punch" that enabled Paine to put the legislation through Congress, where the "hammering" of Maury and Joseph Henry had been ineffectual.

The credit of organizing the meteorological service belongs solely to Chief Signal Officer Albert J. Myer.

No reference to Abbe or the Cincinnati observatory occurs in these records of Congress. Abbe had been studying astronomy at Pulkova when national weather services were being developed in Europe following the lead of Le Verrier at Paris, in 1862 and 1863. Abbe came to Cincinnati as director of the astronomical observatory in 1868. In 1869 he obtained promise from the Cincinnati Chamber of Commerce of financial support for three months for a telegraphic weather service. The first bulletin was issued September 1, 1869. After three months' trial the support of the chamber of commerce terminated, and Abbe maintained the bulletin for six months himself. In the meantime Mr. Armstrong, of the Western Union, began publishing a weather

<sup>1</sup> Brooks, C. F. Matthew Fontaine Maury, Recent biographies of, abstracted from reviews by Roscoe Nunn. Mo. Wea. Rev. 57: 472.

<sup>2</sup> [The writer probably meant in an administrative sense.—Ed.]

map in February, 1870; and in May, Abbe's bulletin was combined with this, and continued until December, when the Signal Service office in Cincinnati began to issue weather maps (11).

In November, 1869, Lapham prepared a resolution which was introduced by the delegate from Milwaukee, Mr. E. D. Holton, at the second convention of the National Board of Trade, at Richmond, Va., on December 3. It is solely in connection with this resolution that Abbe claimed connection with the initiation of the national weather service, writing "In November, 1869, occurred at Richmond the annual meeting of the National Board of Trade. Several of the Cincinnati delegates (and especially Mr. John A. Gano, president of the Cincinnati Chamber of Commerce) had been the hearty supporters of my Weather Bulletin, and were desirous of bringing the subject to the attention of that body. Their action was, however, anticipated by that of the Hon. C. D. Holton, of Milwaukee, who presented a memorial drawn up by the Hon. I. A. Lapham" (12). The same matter was referred to later by Abbe (13, 14). This memorial led to a resolution by a subcommittee "that the executive council be empowered to recommend to Congress to afford such aid to the different observatories of the country as will enable the astronomers in charge to give the necessary time to the subject." (See p. 323 of the printed report of this convention.) There is no record of action on this resolution, and if passed the executive committee failed to avail itself of the power conferred upon it. The text of all memorials and addresses to Congress and to State legislatures is given in full at the end of the report of the convention, and there is no reference to this subject. It must be inferred that Abbe had no overt connection with the initiation of our national weather service.

The history of the connection of the Smithsonian Institution and of Joseph Henry with American meteorology was long and important. The annual reports of the Secretary supply the data for the following brief summary. The institution was organized in 1847, with a program giving a large place to meteorology. In 1849, with funds appropriated at the last meeting of the regents in the preceding year, 216 observers were equipped and began reporting. Presidents of telegraph companies were asked, in 1849, and agreed to transmit weather reports free of charge, but this service did not begin until 1856 or 1857. A map with iron pins to which were attached colored disks to show the "face of the sky" was displayed as a museum exhibit for the amusement of visitors to the institutions, and daily reports were tabulated and furnished to the Washington Evening Star for publication. These reports were obtained from two lines, one running from New York to New Orleans and the other from Washington to Cincinnati. The service ceased in 1861, except for an ineffectual attempt to resume it in 1862. The corps of voluntary observers, reporting by mail, reached at most 500, but diminished greatly during the war. Henry asked General Myer to take these

observers over in 1872, and this was accomplished in 1874. They were continued without change until Myer died and was succeeded by W. B. Hazen as Chief Signal Officer in 1881. In that year Hazen addressed the governors of all the States a circular letter urging the establishment of State weather services. This was afterwards placed in the hands of H. H. C. Dunwoody, who traveled throughout the country organizing what has now become the climatological service of the Weather Bureau. The credit for this development, beginning in 1881, should go to Hazen and Dunwoody.

The official history of James Pollard Espy is somewhat obscure. He obtained an international reputation by the publication of his book *The Philosophy of Storms*. Afterwards he was employed under the direction of the Surgeon General of the Army, and still later under the Secretary of the Navy. Four reports from his pen were published in 1843, 1849, 1851, and 1857. The last of these marks the end of his connection with the Government, and he died about the time that the Signal Service was organized, in 1860, and 10 years before the Signal Service was concerned with meteorology. Espy organized a corps of observers, numbering 163, in his second report. Joseph Henry records in his annual reports that he had obtained the cooperation of Espy. Thirty of Espy's reporters are also listed in the first Smithsonian list in 1849, and after the termination of Espy's work his observers were absorbed into the Smithsonian corps of observers. Lapham was one of these, and the complete file of his observations, on file in the Wisconsin Historical Society, show that he ultimately became a cooperative observer under the Signal Service, when the Smithsonian observers were transferred in 1874.

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